

General Comments – Residential BSERs	
EPA Comment: 6/30/21	EPA Comment on 10/19/2021 Locus Revised Draft
<p>1) It will be clearer to property owners and residents if the generic references to BSERs or “The BSERs” are replaced with “This BSER”. For example, revise:</p> <ul style="list-style-type: none"> <li>“This BSER was prepared as prescribed in the Flow Chart...” instead of: “BSERs are prepared as prescribed in the Flow Chart...”</li> </ul> <p>“This BSER is designed to be updated...” instead of: “The BSER is designed to be updated,”</p>	<p><b>[Section 3, Communications Plan]:</b> Replace “<i>the BSER via a phone call.</i>” with “<i>this BSER via a phone call.</i>”</p>
<p>2) <b>[Section 1.1, Purpose]:</b> First use of acronym “WP” is not well defined in the text. In line with EPA’s community involvement approach, for public clarity EPA requests limiting the use of acronyms and for the BSERs always spelling out:</p> <ul style="list-style-type: none"> <li>Administrative Settlement Agreement and Order on Consent (or, “Administrative Order”)</li> <li>Operations and Maintenance</li> <li>Not detectable</li> <li>Sub-membrane or sub-slab depressurization system</li> <li>Vapor Intrusion</li> <li>Work Plan</li> <li>Chemical of concern (COC appears unused)</li> <li>No further action (NFA appears unused)</li> <li>Post-removal site control (PRSC appears unused)</li> <li>Reporting limit (RL appears unused)</li> <li>Sampling and Analysis Plan (SAP appears unused)</li> <li>Soil vapor extraction (SVE appears unused)</li> <li>Vinyl chloride (VC appears unused)</li> </ul> <p>As well, the acronym RPD is not in the List of Acronyms and Abbreviations.</p>	<p>Addressed, except as indicated below:</p> <ul style="list-style-type: none"> <li>Remove acronym “SAP” from List of Acronyms and Abbreviations.</li> <li>Spell out the acronym “WP” in Section 1.1, second paragraph, second line, to identify Figure 5 as the “Work Plan Flow Chart, Figure 5...”.</li> <li>Remove acronym (O&amp;M) from 9.0 Section header.</li> <li>Acronyms for sub-membrane or sub-slab depressurization system (SMDS / SSDS) are used in text and in appendices and are well defined in the text.</li> </ul>
<p>3) <b>[Section 1.1]:</b> Add more details to the bullets specifying when Draft BSERs will be prepared. The property owner will likely not have the Vapor Intrusion Work Plan to reference. For Bullet 1:</p> <ul style="list-style-type: none"> <li>Specify if a Draft BSER will be prepared after the initial sampling event is completed.</li> <li>Include more information on what is meant by “<i>After a sampling event and prior to follow-up (e.g. second-round) sampling activity.</i>” The expression “second-round” is not defined for the property owner or resident.</li> <li>Clarify if “follow-up sampling” is as a continuation of an existing sampling event or a different future sampling event.</li> </ul>	<p>Draft BSERs are not discussed in Final BSER document.</p>

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<p>4) <b>[Section 1.1]:</b></p> <ul style="list-style-type: none"> <li>• The term “Tier 2” is only used once and not referenced again. It will be clearer to use Tier 2 (Accelerated or Urgent Response) and Short-term Response consistently throughout the BSER text and tables. The terms need to be referentially consistent throughout the BSER.</li> <li>• The Tier 2 TCE screening values of 6 µg/m<sup>3</sup> and 2 µg/m<sup>3</sup> should be introduced in this bullet, or another referenced Section. For context, TCE is not first mentioned in the BSER until Section 3, Communications Plan.</li> <li>• EPA recommends the text be revised from “After sampling confirms a result in exceedance of Tier 2” to “If sampling confirms an indoor air exceedance of Tier 2.”</li> </ul>	Addressed.
<p>5) The BSER should provide plain language information on what are the TCE (a) Screening Levels and (b) Action Levels. One reference is presented in the CalEPA OEHHA fact sheet: [ HYPERLINK "http://www.waterboards.ca.gov/santaana/water_issues/programs/scp/docs/Ford/TCE_Fact_Sheet.pdf" ]</p>	Addressed.
<p>6) <b>[Section 1.1]:</b>, The definition or description of “preemptive mitigation” needs to be better explained in the BSER. A “preemptive mitigation” may not be applicable to every homeowner where a VI investigation is in progress.</p>	Addressed.
<p>7) <b>[Section 1.1]</b>, the definition or description of a “a mitigation system” needs to be better explained in the BSER. When will a vapor intrusion mitigation system be installed (e.g., if results exceed the Tier 2 indoor air Accelerated Response, or a crawlspace or other pathway sample results indicates vapor intrusion is occurring)?</p>	Addressed in Final BSER <b>Section 1.2, TCE Action Levels and the Decision Framework for Vapor Intrusion Mitigation System Installation.</b>
<p>8) Multiple references to “(Section 0)” and to “Section Error! Reference source not found” need to be globally corrected (e.g., RES072, RES078).</p>	Addressed.
<p>9) The text should be revised so it is clearer to the property owner when, “<i>Ultimately, a Final BSER will be prepared at the conclusion of the VI investigation activities (e.g. air sampling and/or long-term mitigation).</i>” For example, a Final BSER will be prepared when:</p> <ul style="list-style-type: none"> <li>• Indoor air sampling that includes at least two wintertime sampling events is complete, and the results show no unacceptable risk to human health due to vapor intrusion and no further action at the property is required.</li> <li>• A vapor intrusion mitigation system was installed, and the mitigation system has been shown to prevent indoor air vapor intrusion after one year of indoor air sampling that includes at least two wintertime sampling events.</li> </ul>	Addressed in Final BSER <b>Section 6, Building Sampling Results and Recommendations.</b>
<p>10) For a public audience, EPA Community Involvement requests avoiding the use of Latin abbreviations e.g. and i.e. For example, the text can be revised to remove the parentheses around: “(e.g., 6 micrograms per cubic meter [µg/m<sup>3</sup>])” to: “in the event</p>	Addressed. Reviewer recommends Locus also change the Appendix C, <b>Blank Field Forms for Use as Applicable</b> to remove e.g. and use instead “for example,” “such as”, or “example” [italicized].

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<i>that indoor air trichloroethene (TCE) sampling results exceed EPA Urgent Response screening level of 6 micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>) a BSER will....”</i>	
11) To better convey the urgency of an Urgent Response, replace “would be notified” with “will be notified.” The term “Urgent Response” should be globally capitalized. As well, convey that sampling results will be communicated with owners “and residents.”	The term “Urgent Response” is globally capitalized.  Revise <b>Section 3, Communications Plan</b> , to change “owner would be notified” to “owner will be notified”.
12) For clarity, replace “... if/when an Accelerated Response TCE VI mitigation is necessary” to: “if an Accelerated Response for TCE vapor intrusion is necessary.”	Addressed.
13) EPA asks that all of the past letters or communications sent to residences and property owner be included as a BSER Attachment. The BSER will serve as the record of the investigation. EPA will provide Locus with EPA’s public outreach tracking and copies of EPA communications to residences and property owners.	Addressed in Final BSER <b>Appendix A, Executed Access Agreement/s</b> and new <b>Appendix R, Records of Previous Communications to Property Owners</b> .
14) Property owners and occupants will be notified of sampling results via the BSER and the BSER should note that, if requested EPA and/or Locus will go over the BSER with the owner via a phone call or a meeting to review the mitigation plan.	Addressed.
15) For each sampling event, state if the owner and/or occupants were previously notified about their results. If they were, include the letter or communication in an attachment to the BSER	Addressed in <b>Final BSER Section 4, Chronology of Vapor Intrusion Investigation</b> , and <b>new Appendix R</b> .
16) The recommendations for the next steps should be clearly presented to the EPA for review and approval and for clarity to the property owners and tenants. One way of doing this would be to move the sampling results and the plan or recommendation for the building out of the Data [QA/QC] Evaluation section, and create a new BSER section: Building Sampling, Results, and Recommendations.	Addressed. Final BSER contains new <b>Section 6, Building Sampling Results and Recommendations</b> .
17) <b>[Section 5.2, Results with Background Outdoor Air or Indoor Source Interferences]:</b> EPA requests that section be separated into two separate sections: <b>Section 5.2: Results with Background Outdoor Air Interferences</b> , and <b>Section 5.3: Results with Indoor Source Interferences</b> .  The presentation of background outdoor air concentrations in Section 5.2 is be difficult to follow. Consider a systematic template for Section 5.2, such as:  <i>Since 2015, background outdoor air TCE concentrations from the surrounding neighborhood north of Duane Avenue have ranged from not detected to 1.6 <math>\mu\text{g}/\text{m}^3</math>. TCE in background outdoor air are from unknown sources and not expected to be from TCE in groundwater and vapor intrusion. The background outdoor air sample results associated with this property are shown as “Outside” samples in Tables 1 and 2. As shown in Tables 1 and 2, the following sampling events had elevated outdoor air TCE concentrations that interfered with the indoor air vapor intrusion evaluation:</i>	Partially Addressed. Reviewer recommends Locus rename <b>Section 5.2 “Results with Background Outdoor Air Interferences”</b> as requested in EPA 6/30/21 General Comment.

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<ul style="list-style-type: none"> <li>On 30 January 2017 the outdoor air sample had a result of 0.76 µg/m<sup>3</sup>, which was similar to the 0.96 to 0.98 µg/m<sup>3</sup> indoor air TCE concentration results. As the indoor air TCE concentration results are possibly representative of the background outdoor air concentration, the elevated indoor air TCE results may not be from vapor intrusion. Given the uncertainty, another indoor air sample event was conducted on 25 February 2017.</li> </ul>	
18) <b>[Section 6, Sampling Plan Addendum]</b> : Revise heading name to: “Building-Specific Sampling Plan Addenda” to match the ASAOC.	Revise <b>Section 10</b> heading to “ <b>Building-Specific Sampling Plan Addenda</b> ”.
19) <b>[Section 6]</b> : The introductory paragraph should provide more context on the purpose of the Sampling Plan by describing what is the Draft Sampling Plan and the Final Sampling Plan. Clarify why the Draft Sampling Plan, Section 6.1 references Section 6.1.2 stating that sampling will be conducted within 21 days of EPA approval of the Draft BSER; however, the Final Sampling Plan in Section 6.2 is referenced in the past tense.	Addressed in Final BSER <b>Section 10.1, Final Sampling Plan</b> and <b>Section 10.2, Long-Term Sampling Plan</b> .
20) <b>[Section 6.1, Draft Sampling Plan]</b> . Section is not needed as it only redundantly states: “Section 6.1 describes planned additional sampling. Refer to Section 6.2 for documentation associated with the building surveys and sampling conducted to date, if any.” To simplify the text and improve clarity for residences, consider the following revisions: <ul style="list-style-type: none"> <li>Section 6.1 can be incorporated into Section 6,</li> <li>Section 6.1.1 can be changed to Section 6.1, and</li> <li>Section 6.1.2 can be changed Section 6.2, and</li> <li>Section 6.1.3 can be changed to Section 6.3.</li> </ul>	Addressed in Final BSER <b>Sections 10.1 and 10.2</b> .
21) <b>[Section 6.1]</b> : Specify what the actual and/or planned frequency for sampling indoor air, pathways, and outdoor air will be.	Addressed; Draft Sampling Plan is not discussed in Final BSER.
22) <b>[Section 6.1.1]</b> : The final section paragraph states that the “ <i>Final Sampling Plan will be provided to EPA for review in conjunction with the next update to the BSER.</i> ” Clarify when the next update to the BSER will be.	Addressed in <b>Section 10</b> .
23) <b>[Section 6.1.1]</b> : Capitalize Draft Sampling Plan so it is referentially consistent with the Final Sampling Plan.	Addressed; term “Draft Sampling Plan” is not in document.
24) <b>[Section 6.1.1]</b> : Reference in the text that the building layout is shown on Figure 1.	Addressed in <b>Section 2, Building Property/Identification</b> .
25) To improve the use of the references for the public, please include a weblink to the references cited. <ul style="list-style-type: none"> <li>[ HYPERLINK "https://dtsc.ca.gov/wp-content/uploads/sites/31/2016/01/VIMA_Final_Oct_20111.pdf" ]</li> <li>OSWER, 2015: [ HYPERLINK "https://www.epa.gov/vaporintrusion/technical-guide-assessing-and-mitigating-vapor-intrusion-pathway-subsurface-vapor" ]</li> </ul>	Addressed, except as follows: <ul style="list-style-type: none"> <li><u>Locus needs to direct this link to valid site address.</u> [ HYPERLINK "https://dtsc.ca.gov/wp-content/uploads/sites/31/2016/01/VIMA_Final_Oct_20111.pdf" ]</li> </ul>

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<ul style="list-style-type: none"> <li>• ASAOC: [ <a href="https://semspub.epa.gov/src/document/09/100018488">HYPERLINK "https://semspub.epa.gov/src/document/09/100018488"</a> ]</li> <li>• <i>Pending completion of redacted version:</i> Locus Technologies, 2020, Work Plan for Indoor Air</li> </ul> <p>As well, please add a reference to EPA's Vapor Intrusion Screening Values.</p>	<ul style="list-style-type: none"> <li>• Add this link to the CalEPA OEHHA fact sheet reference: [ <a href="http://www.waterboards.ca.gov/santaana/water_issues/programs/scp/docs/Ford/TCE_Fact_Sheet.pdf">HYPERLINK "http://www.waterboards.ca.gov/santaana/water_issues/programs/scp/docs/Ford/TCE_Fact_Sheet.pdf"</a> ].</li> </ul>
26) EPA requests that the format of the TCE results table (e.g., Table 1) be similar to the format used in the past letters mailed to residences so there is consistency in the program. The BSER table will also be more functional through the life of the project if headings are provided for each stage of the BSER, including presenting initial results, multiple sampling events, and (potentially) post-mitigation sampling.	Addressed.
27) <b>[Tables 1 and 2]:</b> Revise the table header “Parameter Name” to “Chemical Name”, which will be more understandable to the general public.	Addressed.
28) The BSER template varies in presenting one or two tables with analytical results. EPA requests that two tables be presented, (1) a table presenting the TCE analytical results, which is used to evaluate potential vapor intrusion, and (2) a one-page wide table presenting all analytical results. Both tables should include the applicable health risk screening values. Using formatting (bold font, highlights), stockholders should be able to readily understand if indoor air results are protective of human health and the Tier 2 (Short-Term / Accelerated and Urgent Response) and Long-Term health risk screening values.	Addressed.
29) It is unclear why <b>Table 1</b> presents “R” rejected values for some TCE results, while the Table 2 results table shows a value. Was the “R” flagged data rejected during data validation due to data quality issues? For example, see: RES072/097 and RES226. If applicable, the BSER should present that the data was “not used” and providing a reason why. The term “Rejected” has a specific analytical definition referring to data quality,	Addressed.
30) <b>[Tables]:</b> Use standard page sizes that can be easily printed (e.g., 8.5x11 inches). For example, Table 2 for RES078/RES079 is 14.86 x 11.49 inches, and RES219/RES220 is 12.22 x 9.44 inches.	Addressed.
31) <b>[Figures]:</b> Use standard printer page sizes (e.g., 8.5x11 inches). For example, Figure 1 for RES219/RES220 is 7.59 x 5.86 inches, and the RES098/227-230 Appendix O Figure 1 is 24.64 x 15.94 inches.	Addressed.
32) <b>[Appendices]:</b> Consider organizing the Appendices so they are presented in a more logical and chronological order. For example, Appendix G (Access Agreements) and Appendix H (Residential Survey Forms) should be presented before Appendices B, D, and E, which are forms for mitigation systems.	Addressed.
33) EPA recommends that references to the “Residential Survey Form” be changed in the text to the Residential “Building Survey” Form to match the ASAOC requirement.	Addressed in text. However, <b>Appendix C, Blank Field forms for Use as Applicable</b> contains a six-page document containing “Residential Survey

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	Form” in its title header; Reviewer recommends Locus revise the form title to “Residential Building Survey Form” to match ASAOC requirement.
34) Consider consolidating <b>Appendix F: “Blank Field Form: Residential Survey Form [NOT APPLICABLE]”, and Appendix H: “Completed Field Forms: Residential Survey Forms”.</b>	Addressed.
35) The appendix name modifier “Completed Field Form” is not always applicable. The appendices title names can be streamlined. For example, “ <i>Completed Field Forms: Mitigation System Installation</i> ” should be streamlined to: “ <i>Mitigation System Installation Field Form</i> ”.	Addressed.
36) <b>[Appendix U, Completed Field Forms: Sampling Chain of Custodies]</b> includes the lab signed sample chain of custodies as they are not part of the Eurofins laboratory reports. Instead of a separate appendix for the chain of custodies, can Eurofins include the chain-of-custodies they sign in their laboratory reports in Appendix V?	Addressed in <b>Appendix Q, Analytical Laboratory Reports and Chain-of-Custodies</b> . Reviewer recommends that Locus re-sort Chain-of-Custodies to follow the last page of the laboratory report rather than appear in the front.

## Specific Comments – BSER RES071/099/160 (Mitigated)

EPA BSER Specific Comments: 10/28/21	EPA Comment on 10/19/2021 Locus Revised Draft
1) <b>[Section 4.0 table]:</b> Describe what prompted the installation of the dialer on August 31, 2016. For example, the dialer malfunctioned and had to be replaced or the part was unavailable at the time of the initial installation	Addressed.
2) <b>[Section 4.0 table]:</b> For the O&M inspections, provide a brief description of findings under the Notable Finding column.	Addressed.
3) <b>[Section 4.0 table]:</b> Technically incorrect to state that indoor air elevations are not caused by VI. However, text can state that indoor air elevated concentrations may be influenced by elevated outdoor air background concentrations.	Addressed.
4) <b>[Section 6.0, Building Sampling Results and Recommendations]:</b> EPA concurs with Philips’ Final BSER recommendation for annual O&M inspections, indoor air sampling during winter 2021/2022, then sampling every five years in alignment with EPA’s Five-Year Review.	Addressed.